## **Abstract**

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A electrically conductive polymeric composition comprising a plurality of polymeric complexes. Each polymeric complex comprises a strand of a  $\pi$ -conjugated polymer and strand of a polyelectrolyte. The polyelectrolyte is non-covalently bond to the  $\pi$ -conjugated polymer and has at least one reactive functional group that facilitates cross-linkage between the polymeric complexes when the polymeric complexes are heated.